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Estimation of water consumption and water disposal in basin of Sviyaga river

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Abstract

© 2016, International Journal of Pharmacy and Technology. All rights reserved.Consumer attitude to water resources within several decades, expressed in wide-scale water-supply activity for satisfaction of national economic and population needs, led to occurrence of adverse changes in water bodies' condition [1]. In this aspect water resources, particularly river waters of the Republic of Tatarstan, in which basins is concentrated a significant industrial and agricultural potential are, are not an exception too. On example of basin of Sviyaga river, author estimates amounts of water consumption and water discharge in water body in multi-year aspect. In process of research with application of comparative analysis and statistic methods was established that summary water consumption in river basin in period of years 2000-2015. was 68368.2 million m3. At this a vast majority of water resources was used for industrial needs, 67,589.8 million m3of water (95.6%), and the rest, 778.44 thousand m3 (1.1%), for satisfaction of agricultural branch needs. By river basin, the largest amount of fresh water use, approximately 49 694 million m3in stated period belongs to share of Birlya river. Amount of water discharge into the river basin for given period was 28510.09 million m3of waste waters; at this the discharge into Sviyaga river directly was 712.08 million m3. According to water pollution index (WPI), in stated period the Sviyaga river was related to "very polluted" river category. A significant pollution level of basin waters minimized the self-purifying ability of the river, and consequently, processes of transformation, sorption and other constituents of self-purification mechanism of Sviyaga river are expressed weakly. There were observed cases of massive fish mortality, accumulation of heavy metals in bottom sediments and ichthyofauna.

Keywords

Feeder, River basin, Water consumption, Water discharge, Water pollution index